

Pre-Start Ventilation Systems

3PV / 5PV / 7PV (Incl. Low Temperature Variants)

Ventilation flow up to 14,000 NI/min (494 SCFM)

IEC IECEx ATEX Ex CE cULus FM TUV SUD ENEC ISO 9001



Operation

Pre-Start Ventilation (PV) is recommended for safe starting of high voltage Ex e and Ex n motors in hazardous areas, where the overall risk assessment (under 60079-7 and 60079-15 respectively) calls for "Special measures".

Expo Pre-Start Ventilation Systems enable users to readily demonstrate compliance with the above equipment standards, and greatly improves safety by eliminating any potentially flammable atmosphere from the machine enclosure prior to start up.

System Components

The PV System has two components; the Control Unit (CU) and the Outlet Valve (OV).

The CU controls flow into the motor enclosure, with pneumatic logic operating the OV based on flow and time.

The OV has two valves; one allows normal ventilation flow and the second provides machine overpressure relief.

In operation, the system provides local indication of ventilation condition and progress, plus volt-free contacts for external indication (see Technical Specification).

For the Low Temperature variant, the CU components are housed in an insulated enclosure, with the logic compartment and incoming logic air maintained at a temperature >-20°C (-4°F)

Features

- Fully third-party approved for Zone 1 Exe ATEX & IECEx Electrical Rotating Machines. Suitable to protect Class I, Div 2 Electrical Rotating Machines
- Three system sizes to cover wide range of flow rates and machine types:
 - 3PV: 500–1,500 NI/min (18 - 53 SCFM)
 - 5PV: 2,000–6,000 NI/min (71 - 212 SCFM)
 - 7PV: 7,000–14,000 NI/min (247 - 494 SCFM)
- Low temperature variants for service down to -50°C (-58°F)
- Ventilation time: User selectable 1-99 minutes
- Local and Remote Start options for easy incorporation in control schemes.
- Continuous Ventilation (CV) Option to permit immediate motor re-start after start-up trip.
- Three output signal options:
 - Ex d switches / Ex e terminal box
 - Volt-free contacts suitable for connection to IS circuits

Explosion Protection

Hazardous Area Classification:

ATEX & IECEx certified for use with Electrical Rotating Machines of types: Ex e (Zone 1) & Ex n (Zone 2).

Sira 13ATEX1083X; IECEx SIR13.0030X

Suitable to protect Class I Div 2 Electrical Rotating Machines

Ambient temperature:

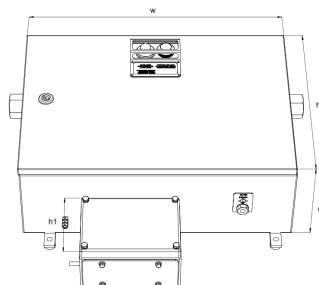
-20°C to +60°C (-4°F to +140°F)

Low Temperature Variant:

-50°C to +60°C (-58°F to +140°F)

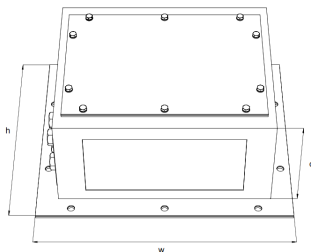
System Data

Control Unit



Dimensions	3PV	5PV (5PV-LT)	7PV
Width w	386.5mm (15.22")	500 (600)mm (19.69 (23.62)")	600mm (23.62")
CU Height h	350mm (13.78")	360 (930)mm (14.17 (36.61)")	670mm (26.38")
JB Height h1	130mm (5.12")	130mm (N/A) (5.12")	130mm (5.12")
Depth d	175mm (6.89")	175 (314)mm (6.89 (12.36)")	270mm (10.63")
Weight	16.5kg (36.38lbs)	20.6 (72)kg (45.42 (158.73)lbs)	43kg (94.8lbs)

Relief Valve



Dimensions	3PV	5PV (5PV-LT)	7PV
Width w	200mm (8")	330 (330)mm (13")	540mm (21.3")
Height h	130mm (5")	280 (280)mm (11")	410mm (16")
Depth d	131mm (5")	136 (136)mm (5.4")	288mm (11.3")
Weight	4kg (8.8lbs)	7 (7)kg (15.4lbs)	25kg (55lbs)

Enclosure & Mounting: Housing & external process connections 316L stainless steel. Wall mounting lugs provided for fitting to machine.

Process Connections:

3PV Ventilation inlet & outlet 3/4" NPT (F)

5PV Ventilation inlet & outlet 1" NPT (F)

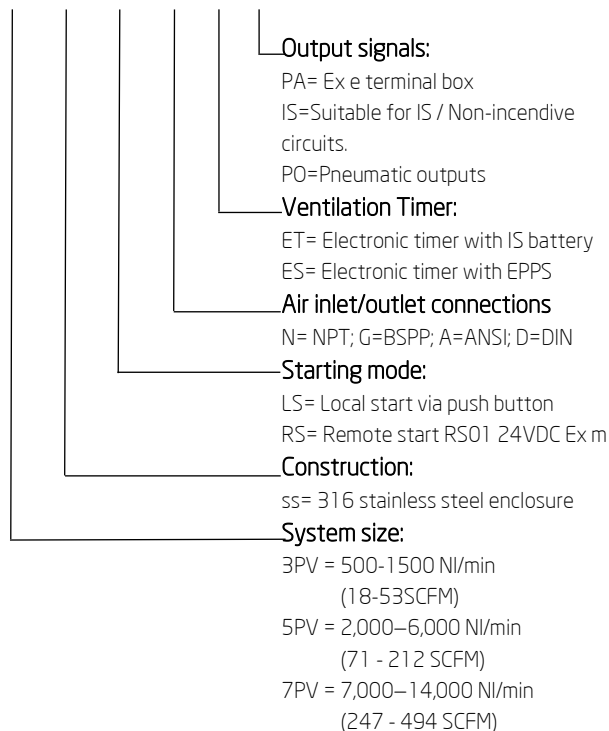
7PV Ventilation inlet & outlet 2" NPT (F)

Reference point & signals: 1/8" NPT (F).

Purge gas: Clean Dry Air or Inert Gas. 4-10 barg (58-145 psi)

Technical Specifications

#PV / ss / RS## / N / ET / PA / Other options



Option codes:

CV= Continuous ventilation; OV= Pneumatically operated outlet valve; LT = Low temperature

Common Data

Intrinsically safe Electronic Timer, range 1-99 mins. battery powered. Option to use Electro Pneumatic Power Supply (EPPS)

System inputs / outputs :

- Remote start (if fitted)
- System ventilating
- Ventilation complete

Relief Valve Lift-Off pressure: default 30mbarg (12.06"wc)
 Minimum: 20mbarg (8.04"wc), Maximum: 50mbarg (20.09"wc)

Certification/Approvals:

ATEX: Ex e ia IIC T4 Gb T amb -20°C to +60°C
 IECEx: Ex e ia IIC T5 Gb T amb -20°C to +59°C

Low temperature variants:

ATEX: Ex d e ia m b IIC T4 Gb T amb -50°C to +60°C
 IECEx: Ex d e ia m b IIC T4 Gb T amb -50°C to +60°C

12/2020